General Specifications

GS 77J08X03-01E

FX3 Series
### Computing Units (mV Input/Variable Software Type)

Moving Average Unit, Dead Time Unit, Velocity Unit, First Order Lug Unit, First Order Lead Unit, Velocity Limiter, Peak Holder, Bottom Holder, Analog Memory, Program Setter, Limiter, Linearizer, Temperature Compensator, Pressure Compensator, Adder/Subtractor, Multiplier, Divider, High Selector, Low Selector, Programmable Unit

JUXTA

■ General

The JUXTA FX3 Series, Computing unit (mV Input/ Variable Software Type) receives mV input signals, applies various computing functions to them, and outputs isolated DC current or DC voltage signals to controllers or recorders.

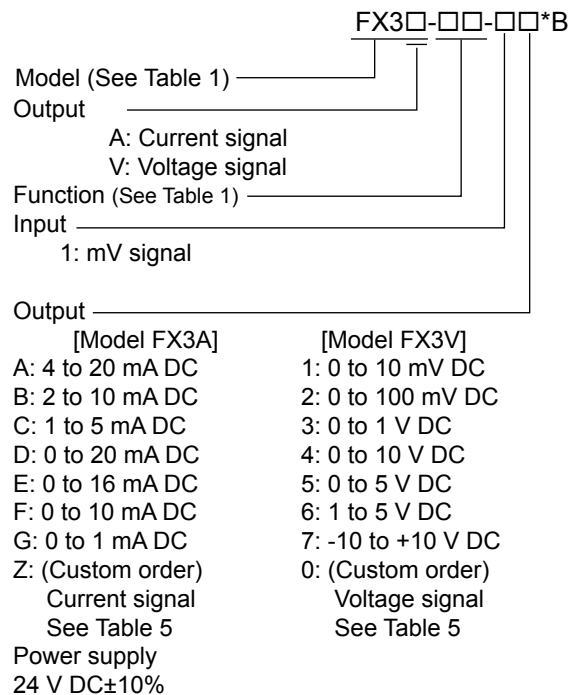*The computation parameters, zero points, and spans can be set and modified using a Handy Terminal (JHT200).*
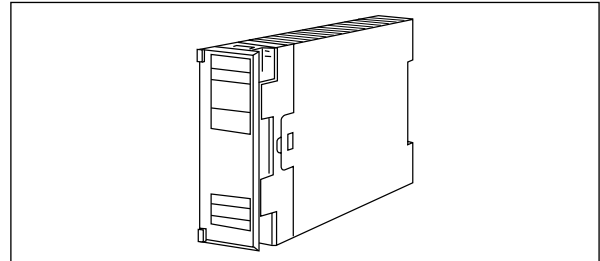
■ List of Computing Units

Table 1. List of FX3 Series

Descriptions	Models □: V or A
Moving Average Unit	FX3□-MA
Dead Time Unit	FX3□-DT
Velocity Unit	FX3□-VC
First Order Lug Unit	FX3□-LG
First Order Lead Unit	FX3□-LE
Velocity Limiter	FX3□-VL
Peak Holder (with second input for holding)	FX3□-PH
Bottom Holder (with second input for holding)	FX3□-BH
Analog Memory (with second input for holding)	FX3□-AM
Program Setter	FX3□-PS
Limiter	FX3□-LM
Linearizer	FX3□-FX
Temperature Compensator	FX3□-TR
Pressure Compensatior	FX3□-PR
Adder/Subtractor	FX3□-AS
Multiplier	FX3□-ML
Divider	FX3□-DV
High Selector	FX3□-HS
Low Selector	FX3□-LS
Programmable Unit (with contact input)	FX3□-FP

■ Model and Suffix Codes

FX3□-□□-□□*B

Model (See Table 1)
Output
    A: Current signal
    V: Voltage signal
Function (See Table 1)
Input
    1: mV signal

Output

[Model FX3A]	[Model FX3V]
A: 4 to 20 mA DC	1: 0 to 10 mV DC
B: 2 to 10 mA DC	2: 0 to 100 mV DC
C: 1 to 5 mA DC	3: 0 to 1 V DC
D: 0 to 20 mA DC	4: 0 to 10 V DC
E: 0 to 16 mA DC	5: 0 to 5 V DC
F: 0 to 10 mA DC	6: 1 to 5 V DC
G: 0 to 1 mA DC	7: -10 to +10 V DC
Z: (Custom order)	0: (Custom order)
Current signal	Voltage signal
See Table 5	See Table 5

Power supply
24 V DC±10%

■ Ordering Information

Specify the following when ordering.
If the fixed constants for each computing function are specified with the order, the specified values will be assigned before shipment.
If not specified, the products are shipped with factory default settings. (Refer to "Functions" for other items which need to be specified when ordering.)
Model and suffix codes: e.g. FX3A-MA-1A*B
Input range: e.g. 0 to 100 mV DC
Moving average time: e.g. 20 sec.

YOKOGAWA ◆

■ Input Specificatons

Input signal: Refer to Table 2

Table 2. Input Signals

Input signals	Model and Suffix codes
1 point of mV signal	FX3□-MA, FX3□-DT, FX3□-VC, FX3□-LG, FX3□-LE, FX3□-VL, FX3□-PS, FX3□-LM, FX3□-FX
2 points of mV signals	FX3□-PH, FX3□-BH, FX3□-AM, FX3□-TR, FX3□-PR, FX3□-AS, FX3□-ML, FX3□-DV, FX3□-HS, FX3□-LS, FX3□-FP

Measuring range: Refer to Table 3

Table 3. Measuring Range

Input signal	Measuring range
mV signal	Each measuring range and span is as follows: -100 to +1250 mV: span 250 mV or more -50 to +250 mV: span 50 m V or more -10 to +50 mV: span 10 mV or more -2 to +10 mV: span 3 mV of more

Input resistance: 1 MΩ (3 kΩ or more during power off)
Maximum allowable input: -0.5 to +4.0 V DC
Input adjustment function: ±1% of span (Zero/Span)

■ Output Specifications

Output signal: DC current signal or DC voltage signal
Allowable load resistance: Refer to Table 4

Table 4. Output signals

Output range	Output range
4 to 20 mA DC: 750 Ω or less	0 to 10 mV DC: 250 kΩ or more
2 to 10 mA DC: 1500 Ω or less	0 to 100 mV DC: 250 kΩ or more
1 to 5 mA DC: 3000 Ω or less	0 to 1 V DC: 2 kΩ or more
0 to 20 mA DC: 750 Ω or less	0 to 10 V DC: 10 kΩ or more
0 to 16 mA DC: 900 Ω or less	0 to 5 V DC: 2 kΩ or more
0 to 10 mA DC: 1500 Ω or less	1 to 5 V DC: 2 kΩ or more
0 to 1 mA DC: 15 kΩ or less	-10 to +10 V DC: 10 kΩ or more

Output adjustment function: ±1% of span (Zero/Span)

■ Standard Performance

Accuracy rating: ±0.2% of span
Note that the accuracy is not guaranteed for output levels less than 0.5% of the span of 0 to X mA output range type.
The ranges corresponding to the input span of less than 10mV:

$$\text{Accuracy} = 0.2 \times \frac{10 \text{ (mV)}}{\text{Input span (mV)}} \text{ (\%)}$$

FX3□-FX: ±0.2% of span
(when piecewise-linear-gain is 1 or less)
FX3□-TR, FX3□-PR: ±0.5% of span
(when K1=K2=1, A2=0%, X2=100%)
FX3□-AS: ±0.3% of span
(when K1=K2=1, K3=0.5, A1=A2=A3=0%)

FX3□-ML, FX3□-DV: ±0.5% of span
(when K1=K2=K3=1, A1=A2=A3=0%)
FX3□-FP: ±0.2% of span
(when Input; %=Output; %)
Response speed: 500 ms, 63% response (10 to 90%)
Computation cycle: 100 ms
Insulation resistance: 100 MΩ or more at 500 V DC between input and output, output and power supply, and input and power supply.
Withstand voltage:
1500 V AC/min. between (input and output) and power supply.
500 V AC/min. between output and power supply.

■ Environmental Conditions

Operating temperature range: 0 to 50°C
Operating humidity range: 5 to 90% RH (no condensation)
Power supply voltage: 24 V DC±10%
Effect of power supply voltage fluctuations: ±0.2% or less of span for fluctuation of 24 V DC±10%
Effect of ambient temperature change:
±0.2% of span or less for a temperature change of 10°C.
Current consumption: 24 V DC 56 mA (FX3V), 78 mA (FX3A)

■ Mounting and Dimensions

Material: ABS resin (Case body)
Mounting method: Rack, Wall, or DIN rail mounting
Connection: M4 screw terminal
External dimensions: 72 x 24 x 127 mm (H x W x D)
Weight: Approx.130g

■ Standard Accessories

Tag number label: 1
Range label: 1
Mounting block: 2
Mounting screw: M4 screw x 2

■ Custom Order Specifications

Output signal: Refer to Table 5
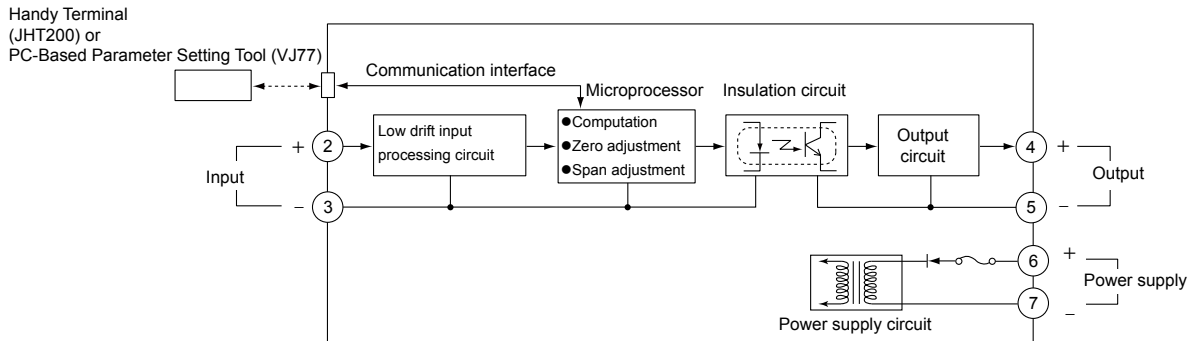
Table 5. Acceptable range for custom order

	Current signal	Voltage signal
Output range	0 to 24 mA DC	-10 to +10 V DC
Span	1 to 24 mA DC	10 mV to 20 V DC
Zero elevation	0 to 200%	-100 to +200%

■ Terminal Assignments

	FX3□-MA, -DT, -VC, -LG, -LE, -VL, -LM, -FX
1	Do not use this terminal
2	Input (+)
3	Input (-)
4	Output (+)
5	Output (-)
6	Power supply (+)
7	Power supply (-)

	FX3□-PS
1	Start/Reset
2	Do not use this terminal
3	Start/Reset
4	Output (+)
5	Output (-)
6	Power supply (+)
7	Power supply (-)

	FX3□-PH, -BH, -AM, -TR, -PR, -AS, -ML, -DV, -HS, -LS, -FP
1	Input 2/Hold (+)
2	Input 1 (+)
3	Input 1, 2/Hold (-)
4	Output (+)
5	Output (-)
6	Power supply (+)
7	Power supply (-)

■ Block Diagrams

● **FX3□ -MA, -DT, -VC, -LG, -LE, -VL, -LM, -FX**

● **FX3□ -PS**
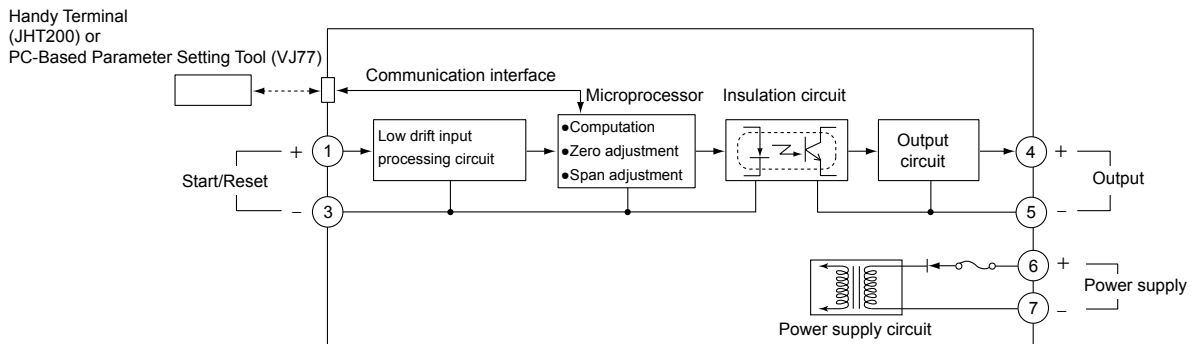
● **FX3□ -PH, -BH, -AM, -TR, -PR, -AS, -ML, -DV, -HS, -LS, -FP**

■ External Dimensions

Unit: mm

2-Φ5×5.5 Mounting hole

24

99

90

127

37

72

DIN rail mounting

Rack mounting

Wall mounting
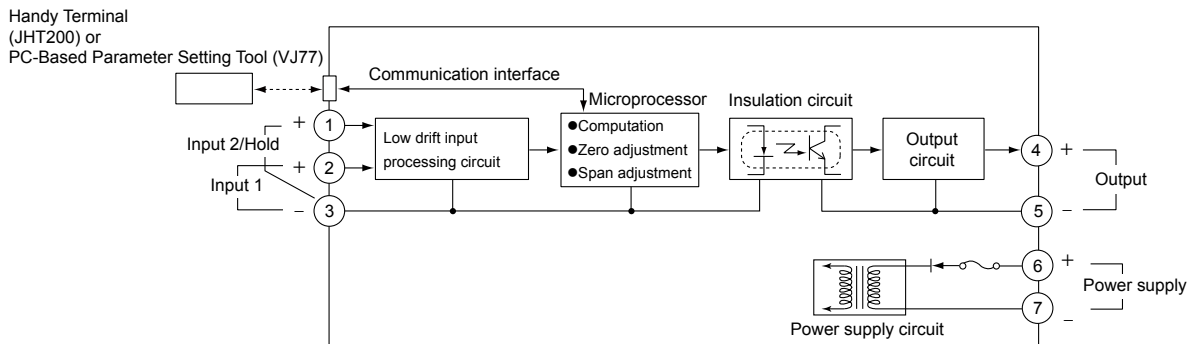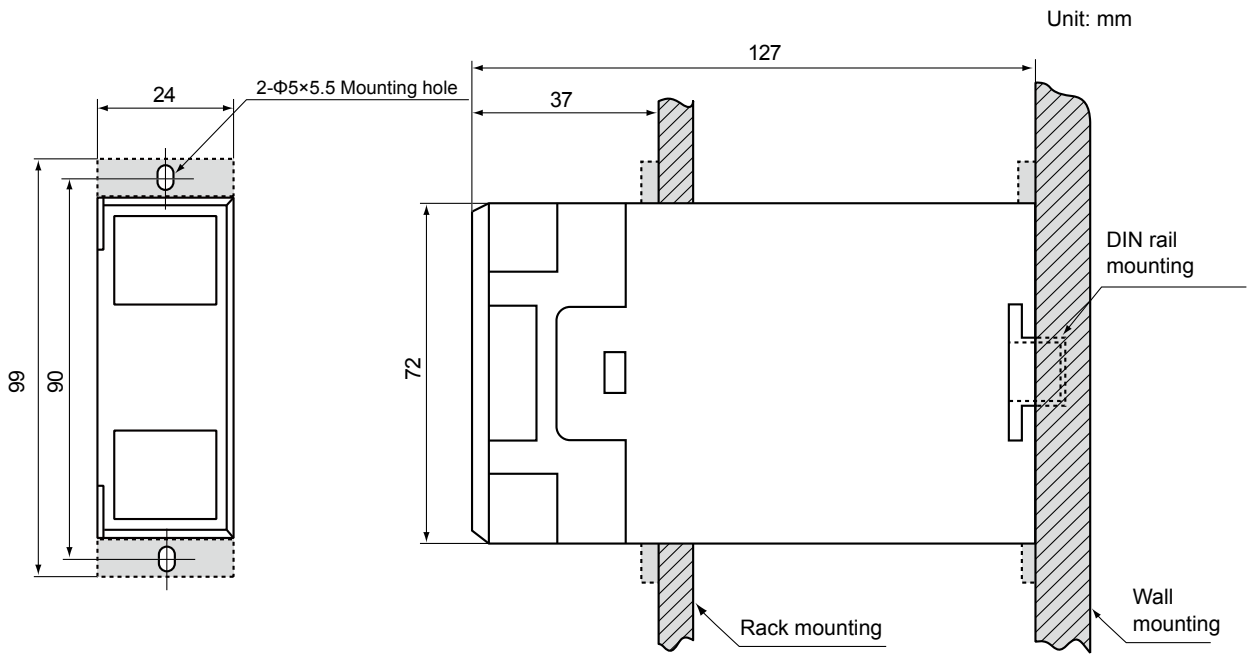
■ Functions

• FX3□-MA Moving Average Unit

This computing unit outputs the average of 20 input data (X) sampled at intervals of one-twentieth of the moving-average time (L). At the next sampling, the unit discards the oldest data and outputs the average of the 20 data, repeating the same operation. The output between samplings is smoothed out by interpolation.

<Example>

$$\text{Moving average (Y)} = \frac{X1+X2+...X20}{20}$$
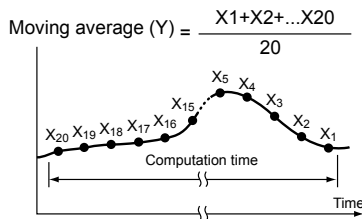
Setting range of moving-average time:
    0 to 7990 sec. with 4 significant digits.
    minimum unit is 1 sec.
To use a first-order lag filter for input (X), set the first order lag time constant (T).
Setting range of time constant: 0.0 to 799.0 sec.; minimum unit is 0.1 sec.
Accuracy of moving average and time constant setting: (±5.0% of set value) ± 1.0 sec.

Ordering information and factory default setting
 •Moving average time: factory default; 10 sec.
 •First order lag time constant: factory default; 0 sec.

• FX3□-DT Dead Time Unit

This computing unit stores the input values (X) sampled at intervals of one-twentieth of the dead time (L) into 20 buffers and outputs data (Y) by orderly shifting them after the dead time has elapsed. The output between samplings is smoothed by interpolation.

$$Y= \frac{e^{-Ls}}{1+Ts} X$$

X: Input, L: Dead time
Y: Output, T: Time constant

<Example: 0% → 100% step input>
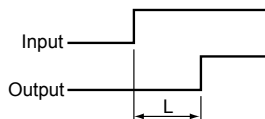
Setting range of dead time:
    0 to 7990 sec. with 4 significant digits.
    minimum unit is 1 sec.
To use a first order lag filter for input (X), set the first order lag time constant (T).
Setting range of time constant: 0.0 to 799.0 sec.; minimum unit is 0.1 sec.
Accuracy of dead time and time constant setting:
    (±5.0% of set value) ±1 sec.

Ordering information and factory default setting
 •Dead time: factory default; 10 sec.
 •First order lag time constant: factory default; 0 sec.

• FX3□-VC Velocity Unit

This computing unit calculates the input velocity by subtracting the input of the last velocity computation (X_L) from the present input (X). The unit then adds a 50% bias to one-half of the obtained velocity and outputs the result (Y).
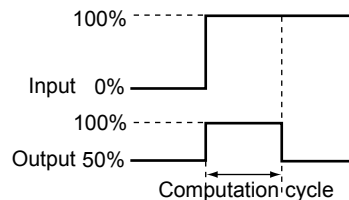
    The output obtained is as follows:
        When there is no change in input: 50%
        When the input has increased: 50% or more (100% when $X-X_L$= 100%)
        When the input has decreased: 50% or less (0% when $X-X_L$= -100%)

$$Y= \frac{X-X_L}{2} + 50\%$$

X: Present Input
X_L: Input of the last velocity computation
Y: Output

<Example>

Setting range of velocity computation time:
    0 to 7990 sec. with 4 significant digits.
    minimum unit is 1 sec.
To use a first-order lag filter for input (X), set the first-order lag time constant (T).
Setting range of time constant: 0.0 to 799.0 sec.; minimum unit is 0.1 sec.
Accuracy of velocity computation and time constant setting: (±5.0% of set value) ± 1 sec.

Ordering information and factory default setting
 •Velocity computation time (L): factory default; 20 sec.
 •First order lag time constant (T): factory default; 0 sec.

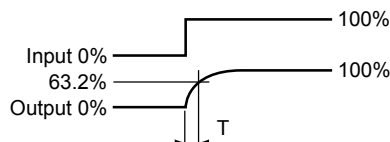## • FX3□-LG First Order Lag Unit

This computing unit provides a first order lag computation on input (X) with a time constant (T) and outputs the result (Y).

$$Y= \frac{1}{1+Ts} X$$

X: Input, T_s: Time constant, Y: Output

<Example: 0% → 100% step input>

Setting range of time constant: 1.0 to 799.0 sec.; minimum unit is 0.1 sec.
Accuracy of time constant setting:
    (±5.0% of set value) ±1 sec.

Ordering information and factory default setting
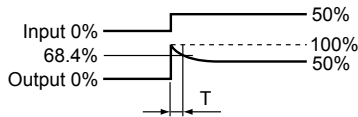 • First order lag time constant: factory default; 10 sec.

6

• FX3□-LE First Order Lead Unit

This computing unit provides a first order lead computation on input (X) with a time constant (T) and outputs the result (Y).

$$Y = \left(1 + \frac{T_S}{1 + T_S}\right) X$$

X: Input, T_S: Time constant, Y: Output

<Example: 0% → 50% step input>

Setting range of time constant: 1.0 to 799.0 sec.; minimum unit is 0.1 sec.
Accuracy of time constant setting: (±5.0% of set value) ± 1 sec.

Ordering information and factory default setting
•First order lead time constant: factory default; 10 sec.

• FX3□-VL Velocity Limiter

This computing unit limits the input (X) velocity at the ascending velocity limit for a positive change, at the descending velocity limit for a negative change, and outputs the limited value (Y). When the input velocity (slope) is not more than the limit, the unit outputs the input as it is.

<Example: 0% → 100% →0% step input>
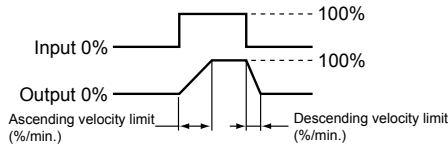
Setting range of velocity limit:
0.1 to 600.0%/min.; minimum unit is 0.1 %/min.
Setting the limit at 700.0%/min. or above does not limit the input, the unit simply outputs the input as is (Open limit function).
Setting accuracy of velocity limit:
(±5.0% of set value) ± 0.1%/min.

Ordering information and factory default setting
•Ascending velocity limit: factory default; 100%/min.
•Descending velocity limit: factory default; 100%/min.

• FX3□-PH Peak Holder

This computing unit outputs the current signal or voltage signal (Y) corresponding to the peak value when receiving hold-command input of more than 75%.

• FX3□-BH Bottom Holder

This computing unit outputs the current signal or voltage signal (Y) corresponding to the bottom value when receiving hold-command input of more than 75%.

• FX3□-AM Analog Memory

This computing unit holds the output signal (Y) at the moment when receiving hold-command input of more than 75%.

• FX3□-PS Program Setter

This computing unit starts the program when start/reset input of more than 75% is accepted, and outputs the isolated current or voltage signal internally generated. The output signal changes with the time lapse corresponding to the time table11 breakpoints.

Setting conditions of time table:
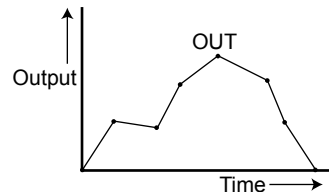0.0 sec. ≤ (t_0 to t_{10}) ≤ 7984 sec.,
-10.0% ≤ (Y_0 to Y_{10}) ≤ 110.0%
$t_0 < t_1 < t_2 < t_3 < t_4 < t_5 < t_6 < t_7 < t_8 < t_9 < t_{10}$
Time breakpoints: t_0 to t_{10}
Output breakpoints: Y_0 to Y_{10}
Setting resolution: Time; 8 sec., Outputs; 0.1%

<Example>

Ordering information and factory default setting
•Time table: Write and specify all data of t_0 to t_{10} and Y_0 to Y_{10} on the work sheet below.

<Work Sheet>

Model and suffix code: _____

| Time (sec.)		Output (%)	
t0		Y0	
t1		Y1	
t2		Y2	
t3		Y3	
t4		Y4	
t5		Y5	
t6		Y6	
t7		Y7	
t8		Y8	
t9		Y9	
t10		Y10	

• FX3□-LM Limiter

This computing unit serves as an ordinary computing unit as long as the input (X) is within the upper and lower limits. When the input exceeds the limit, the unit outputs the signal that corresponds to the limit (Y).

Setting range of limit: within 0.0 to 100.0%; minimum unit is 0.1% (both upper and lower)

However, if the upper limit is set less than the lower limit, the unit outputs the upper limit.

<Example>
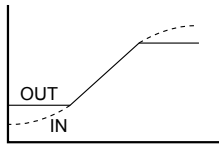
Ordering information and factory default setting
•Upper limit: factory default; 100%
•Lower limit: factory default; 0%

• FX3□-FX Linearizer

This computing unit gives an arbitrary relationship between the input (X) and output (Y) signals using an arbitrary piecewise linear function. This piecewise linear function has 11 breakpoints, which each give an input-output relationship as a percentage (%).
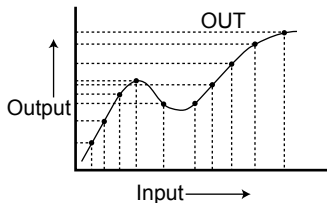
Breakpoint setting conditions:
$-10.0\% \leq (X_0 \text{ to } X_{10}) \leq 110.0\%$,
$-10.0\% \leq (Y_0 \text{ to } Y_{10}) \leq 110.0\%$
$X_0 < X_1 < X_2 < X_3 < X_4 < X_5 < X_6 < X_7 < X_8 < X_9 < X_{10}$
Input breakpoints: X_0 to X_{10}
Output breakpoints: Y_0 to Y_{10}

<Example>

Ordering information and factory default setting
•Breakpoint data: factory default; Input=Output
Note: When specifying the data, write all data of X0 to X10 and Y0 on Y10 to the work sheet below.

<Work Sheet>
Model and suffix code: _____

Input (%)		Output (%)	
X0		Y0	
X1		Y1	
X2		Y2	
X3		Y3	
X4		Y4	
X5		Y5	
X6		Y6	
X7		Y7	
X8		Y8	
X9		Y9	
X10		Y10	

• FX3□-TR Temperature Compensator

This computing unit performs temperature compensation to gas flow signals (X1) and temperature signals (X2) measured by pressure flowmeters (Orifice, Bentury, Flow nozzle, etc.), and outputs the compensated gas flow signal (Y).

Computing parameters can be set using Handy Terminals.

$$\text{Formula}\quad Y = \frac{K1 \cdot \sqrt{X1}}{\sqrt{K2 \cdot X2 + A2}}$$

Y: Compensated flow output (%)   K1: Gain (no unit)
X1: Uncompensated flow input (%)   K2: Gain (no unit)
X2: Temperature input (%)   A2: Bias (%)

If square root extraction is necessary for uncompensated flow input signal, set store address for the fixed constant (value of C14).

With square root extraction: C14=100.0%
Without square root extraction: C14=0.0%
Setting range of gain/bias:
gain ±7.990, bias ±799.0% = ±799.0%
If the ranges exceed ±800.0%, a correct computation cannot be obtained.
minimum unit; gain 0.001, bias 0.1%.

Ordering information and factory default setting
•Gain: factory default; K1=K2=1.000
•Bias: factory default; A2=0.0%
•Square root extraction for flow input: factory default; no setting

How to obtain the gain (K1, K2) and bias (A2):

$$K1 = \frac{\text{Uncompensated flow input span}}{\text{Compensated flow input span}}$$

$$K2 = \frac{\text{Temperature input span (K)}}{\text{Reference temperature (K)}}$$

$$= \frac{\text{Max. value (ºC) – Min. value(ºC)} \ \text{(of temperature range)}}{\text{Reference temperature (ºC) + 273.15 (ºC)}}$$

$$A2 = \frac{\text{Min. value (K) (of temperature range)}}{\text{Reference temperature (K)}} \times 100\ (\%)$$

$$= \frac{\text{Min. value (ºC) (of temperature range) + 273.15 (ºC)}}{\text{Reference temperature (ºC) + 273.15 (ºC)}} \times 100\ (\%)$$

Note: Use Divider in cases where the temperature compensation for gas flow is measured by vortex flowmeter.

• FX3□-PR Pressure Compensator

This computing unit performs temperature compensation to gas flow signal (X1) and pressure signal (X2) measured by pressure flowmeters (Orifice, Bentury, Flow nozzle, etc.), and outputs the compensated gas flow signal (Y).

Computing parameters can be set using Handy Terminals.

Formula $\quad Y = K1 \cdot \sqrt{X1} \sqrt{K2 \cdot X2 + A2}$

Y: Compensated flow output (%)   K1: Gain (no unit)
X1: Uncompensated flow input (%)   K2: Gain (no unit)
X2: Pressure input (%)   A2: Bias (%)

If square root extraction is necessary for uncompensated flow input signal (X1), set store address for the fixed constant (value of C14).

With square root extraction: C14=100.0%
Without square root extraction: C14=0.0%
Setting range of gain/bias:
    gain ±7.990, bias ±799.0% = ±799.0%
    If the ranges exceed ±800.0%, a correct computation cannot be obtained.
    minimum unit; gain 0.001, bias 0.1%.

Ordering information and factory default setting
•Gain: factory default; K1=K2=1.000
•Bias: factory default; A2=0.0%
•Square root extraction for flow input: factory default; no setting

How to obtain the gain (K1, K2) and bias (A2):

$$K1 = \frac{\text{Uncompensated flow input span}}{\text{Compensated flow input span}}$$

$$K2 = \frac{\text{Max. value (kPa) – Min. value (kPa)}}{\text{Reference pressure (kPa) + 101.32 (kPa)}}$$
(of pressure transmitter range)

$$A2 = \frac{\text{Min. value (kPa)} + 101.32 \text{ (kPa)}}{\text{Reference pressure (kPa) + 101.32 (kPa)}} \times 100 \text{ (\%)}$$
(of pressure transmitter range)

Note: Use Divider in cases where the temperature compensation for gas flow is measured by vortex flowmeter.

• FX3□-AS Adder/Subtractor

This computing unit accepts two voltage signal inputs (X1, X2) from various converters, and outputs the isolated current or voltage signal (Y) after addition and subtraction.

Formula: Y=K3{K1(X1+A1)+K2(X2+A2)}+A3

Y: Output (%)   K1 to K3: Gain (no unit)
X1, X2: Input (%)   A1 to A3: Bias (%)
Setting range of gain/bias:
    gain ±7.990, bias ±799.0% = ±799.0%
    If the ranges exceed ±800.0%, a correct computation cannot be obtained.

Ordering information and factory default setting
• Gain: factory default; K1=K2=K3=1.000
• Bias: factory default; A1=A2=A3=0.0%

• FX3□-ML Multiplier

This computing unit accepts two voltage signal inputs (X1, X2) from various converters, and outputs the isolated current or voltage signal (Y) after multiplication.

The unit can perform pressure compensation by inputting gas flow signals measured by vortex flowmeter etc. and pressure signal as two input signals.

Formula: Y=K3(K1•X1+A1)•(K2•X2+A2)+A3

Y: Output (%)   K1 to K3: Gain (no unit)
X1, X2: Input (%)   A1 to A3: Bias (%)
Setting range of gain/bias:
    gain ±7.990, bias ±799.0% = ±799.0%
    If the ranges exceed ±800.0%, a correct computation cannot be obtained.

Ordering information and factory default setting
•Gain: factory default; K1=K2=K3=1.000
•Bias: factory default; A1=A2=A3=0.0%

How to obtain the gain (K1, K2, K3) and bias (A1, A2, A3) for pressure compensation:

•K1=1 since the output value of flow transmitter is used as it is.
•A1=0% since the output value of flow transmitter is used as it is.

$$K2 = \frac{\text{Max. value (kPa) – Min. value (kPa)}}{\text{Reference pressure (kPa) + 101.32 (kPa)}}$$
(of pressure transmitter range)

$$A2 = \frac{\text{Min. value (kPa)} + 101.32 \text{ (kPa)}}{\text{Reference pressure (kPa) + 101.32 (kPa)}} \times 100 \text{ (\%)}$$
(of pressure transmitter range)

$$K3 = \frac{\text{Uncompensated flow input span}}{\text{Compensated flow input span}}$$

•A3=0% since the compensated flow value is normally used as it is.
Note: Use Pressure compensator in cases where the pressure compensation for gas flow is measured by pressure flowmeter.

• FX3□-DV Divider

This computing unit accepts two voltage signal inputs (X1, X2) from various converters, and outputs the isolated current or voltage signal (Y) after division.

The unit can perform temperature compensation by inputting gas flow signal measured by vortex flowmeter etc.and temperatue signal as two input signals.

Formula:

$$Y = \frac{K3 (K1 \cdot X1+A1)}{K2 \cdot X2+A2} +A3$$

Y: Output (%)   K1 to K3: Gain (no unit)
X1, X2: Input (%)   A1 to A3: Bias (%)
Setting range of gain/bias:
   gain ±7.990, bias ±799.0% = ±799.0%
   If the ranges exceed ±800.0%, a correct
   computation cannot be obtained.

Ordering information and factory default setting
•Gain: factory default; K1=K2=K3=1.000
•Bias: factory default; A1=A2=A3=0.0%

How to obtain the gain (K1, K2, K3) and bias (A1, A2, A3) for temperature compensation:

•K1=1 since the output value of flow transmitter is
   used as it is.
•A1=0% since the output value of flow transmitter is
   used as it is.

$$K2= \frac{\text{Temperature input span (K)}}{\text{Reference temperature (K)}}$$

$$= \frac{\text{Max. value (°C) – Min. value (°C)}}{\text{Reference temperature (°C) + 273.15 (°C)}}$$
(of temperature range)

$$A2 = \frac{\text{Min. value (K) (of temperature range)}}{\text{Reference temperature (K)}} \times 100 \text{ (\%)}$$

$$= \frac{\text{Min. value (°C) (of temperature range) + 273.15 (°C)}}{\text{Reference temperature (°C) + 273.15 (°C)}} \times 100 \text{ (\%)}$$

$$K3= \frac{\text{Uncompensated flow input span}}{\text{Compensated flow input span}}$$

•A3=0% since the compensated flow value is nor-
   mally used as it is.
 Note: Use Temperature compensator in cases where
   the temperature compensation for gas flow is
   measured by pressure flowmeter.

• FX3□-HS High Selector

This computing unit accepts two voltage signal inputs (X1, X2) from various converters, selects the higher one (Y), and outputs a current signal or a voltage signal.

• FX3□-LS Low Selector

This computing unit accepts two voltage signal inputs (X1, X2) from various converters, selects the lower one (Y), and outputs a current signal or a voltage signal.

• FX3□-FP Programmable Unit

This computing unit accepts two voltage signal inputs (X1, X2) from various converters, performs various computations and outputs the isolated current or voltage signal as the result.